Write Up Copy This Into Notes

Notes – Transformations of Quadratic Functions

Consider the standard form of the equation of a parabola:

$$y = a(x - h)^2 + k$$

1. If I graph $y = x^2$, the graph looks like this (sketch in your notebook):
2. If I make "a" negative the parabola opens _____.
3. If I make |a| larger, the parabola gets _____.
4. If I make |a| smaller, the parabola gets _____.
5. If I change the value of "h", the parabola shifts _____ or _____.
6. If I change the value of "k", the parabola shifts _____ or _____.
7. If I want to move my parabola 3 units to the right, what do I need to change (*in the equation above*)?
8. If I want to move my parabola 3 units to the left, what do I need to change?
9. If I want to move my parabola 5 units up, what do I need to change?
10. If I want to move my parabola 5 units down, what do I need to change?
11. If I want to move my parabola 2 units to the left and 3 units down, what do I need to change?
12. If I want to move my parabola 5 units to the right and 2 units up, what do I need to change?
13. What is the vertex of $f(x) = 2(x - 4)^2 + 3$? $(4, 3)$
14. What is the vertex of $g(x) = a(x + h)^2 + k$? $(-h, k)$